



Atmospheric Process Evaluation of Mobile Source Emissions

Subcontractor

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Objective

To identify the state-of-the-art technology and tools for modeling the impacts on ambient air quality of mobile source emissions from alternative and conventional transportation fuels.

Approach

- Identify the existing mass and speciated data sets for current and alternative fuel emissions, and discuss the gaps and uncertainties in these data
- Review approaches and models used to develop mobile source emissions, and discuss their uncertainties and research needs
- Review approaches for modeling air quality impacts of vehicle emissions, and discuss their relative strengths, weaknesses, and uncertainties, the current status of air-shed model evaluation, and related research needs
- Review the chemical mechanisms used to predict how components in vehicle emissions affect ozone, and discuss the research needs
- Review alternative approaches for quantifying relative ozone reactivities of various fuel options, and discuss their relative strengths, weaknesses, and future research priorities
- Make recommendations for future research priorities in the above areas.

Accomplishments

We have submitted a detailed report that presents the review results and recommendations. NREL has approved the report for publication.

Future Direction

This project is now complete. Under separate funding, CE-CERT is conducting experimental and modeling studies of atmospheric reactivities of volatile organic compound constituents of mobile source emissions.

Publications

Carter, W.P., J.M. Norbeck, A. Venkatram, M.J. Barth, R. Hariharan, T.D. Durbin, S.E. Belinski, R. Fitzgerald, and P.G. Stein. (1995). *Atmospheric Process Evaluation of Mobile Source Emissions*. NREL Final Report.